Claims:

1. A surgical system, comprising:

a surgical robot for manipulating a surgical tool to a surgical site with precise positioning during a surgical procedure;

an attachment member configured and dimensioned to attach the surgical robot to a bone associated with said surgical site; and

a controller programmed prior to said surgical procedure to direct the robot to position the surgical tool at the surgical site.

2. The surgical system according to claim 1, wherein said robot comprises:

a base member;

at least four actuators extending outward from the base member at fixed angles, said actuators being arranged in cooperating pairs, said pairs together defining a spherical joint at cooperating ends opposite the base member, and

a surgical tool held by said spherical joints.

3. The surgical system according to claim 2, wherein said surgical tool comprises at least one of a tool guide, a cutting member and a drilling member.

4. The surgical system according to claim 2, wherein said actuators define a longitudinal axis and are configured to provide only translational movement along said axis.

5. The surgical system according to claim 2, wherein surgical site lies at least approximately within a defined plane and said surgical robot is configured and dimensioned such that said base member is at least approximately perpendicular to said defined plane.

6. The surgical system according to claim 1, wherein said robot comprises a miniature parallel robot.

7. A surgical system of claim 1, wherein said robot comprises at least 3 actuators mounted on a base member, said actuator being configured for at least translational or rotational movement.

8. The surgical system according to claim 1, wherein said attachment member comprises a robot receiving adaptor mounted on a bone attachment portion.

9. The surgical system according to claim 8, wherein said bone attachment portion comprises a clamp having at least two jaws shaped to mate with a specific bone configuration.

10. The surgical system according to claim 8, wherein said bone attachment portion comprises at least one wire configured and dimensioned to be received in bone holes.

11. The surgical system according to claim 1, wherein said controller comprises a cpu and user interface communicating with said robot, said cpu containing a program for guiding the robot based on data generated from surgical site images.

12. The surgical system according to claim 11, wherein said surgical site images are created prior to each surgical procedure requiring a new location for the support member.

~~13.~~ A surgical system for facilitating a surgical procedure at a surgical site, comprising:

a surgical robot including a base member; two pairs of actuators extending outward from the base member at fixed angles, wherein said actuators each have first and second ends, said first ends of a pair being spaced apart on said base member and said second ends of a pair coming together to define a tool holding element;

an attachment member removably securable to the robot base member and configured and dimensioned to attach the surgical robot to a bone associated with said surgical site; and

a controller including a cpu and user interface communicating with said robot, said cpu containing a program for guiding the robot based on data generated from surgical site images created prior to said surgical procedure.

14. A method for facilitating a surgical procedure at a patient surgical site, comprising:

generating an initial three dimensional image of a patient surgical site;

planning the surgical procedure utilizing said initial three dimensional image prior to conducting said procedure to provide a surgical plan referencing said initial three dimensional image;

attaching at least a support member of a surgical robot to a patient bone associated with the planned surgical procedure at the surgical site;

generating at least two radiographic images of the surgical site and support member;

correlating said radiographic images to form a pseudo three dimensional image including an accurate position of said support member attached to the bone;

selecting a window from said pseudo three dimensional image and registering said window with a similarly chosen window from said initial three dimensional image; and

correlating the pseudo three dimensional image with the initial three dimensional image such that the support member is located with respect to the surgical plan.

15. The method according to claim 14, wherein said window is selected approximately adjacent the support member.

16. The method according to claim 14, wherein:

said generating an initial three dimensional image comprises at least one of magnetic resonance imaging, CT, or Ultrasound; and

said generating one radiographic image comprises C-arm imaging.

17. The method according to claim 16, wherein said at least two C-arm images are

taken from angles 90 degrees apart from each other.

18. The method according to claim 14, further comprising:

attaching a imaging referencing plate with at least three reference markers located thereon to said support member; and

calibrating the radiographic images based on said reference markers prior to generating said radiographic image of the surgical site.

19. The method according to claim 14, further comprising:

mounting a surgical robot on said support member, said robot including at least one known reference dimension; and

calibrating the radiographic images based on said reference dimension prior to generating said radiographic image of the surgical site.

20. The method according to claim 14, wherein said correlating the pseudo three dimensional image with the initial three dimensional image comprises registering the remaining portions other than said window of said pseudo three dimensional image with the remaining portions other than said window of said three dimensional image.

21. The method according to claim 14, further comprising:

mounting a surgical robot on said support member, said robot including a surgical tool; and automatically positioning the surgical tool with said robot according to the surgical plan based on the correlated location of the support member with respect to said plan.

22. The method according to claim 14, wherein said surgical tool includes a guide sleeve, and said method further comprises inserting a tool through said guide sleeve to a precisely located surgical site.

~~23.~~ A surgical robot, comprising:

a base member;

at least two pairs of arms extending from the base member, said arms

comprising linear actuators wherein the arms of each pair are spaced apart at the base member and extend toward one another opposite said base member, terminating in cooperating ends;

a spherical joint mounted on each pair of said cooperating ends; and

a surgical tool having a tool end extending through said spherical joints such that said tool may be positioned at any point within a predefined plane due to motion of said actuators.

24. The surgical robot according to claim 23, wherein said surgical tool comprises a guide sleeve through which an instrument may be inserted.

25. The surgical robot according to claim 23, wherein said arms further comprise a hinge joint positioned between the linear actuator and spherical joint.

26. The surgical robot according to claim 25, wherein said hinge joint permits pivoting through about 270 degrees around an axis at least approximately parallel to said base member.

27. The surgical robot according to claim 25, wherein said pairs of arms extend from the base member toward each other at an angle between about fifteen and ninety degrees.

28. The surgical robot according to claim 27, wherein said angle is about forty-five degrees.

29. The surgical robot according to claim 28, wherein said arms are spaced apart by about fifty millimeters at the base member.

30. The surgical robot according to claim 23, wherein said spherical joint comprises:

an upper collar attached to the cooperating end of a first arm;

a lower collar attached to the cooperating end of a second arm; and

a ball captured between said collars, said ball defining a hole there through for receiving the surgical tool.

~~31.~~ A clamp for securing a surgical instrument to a bone, comprising:

first and second opposed clamp jaws, said jaws having facing clamping surfaces for contacting the bone;

clamp mechanism cooperating with the clamp jaws to bring the jaws together with said clamping surfaces in parallel relationship;

first and second threaded members received in said clamp mechanism;

a clamp adapter secured to said clamp mechanism by said threaded members, said clamp adapter cooperating with said threaded members to lock said clamp jaws and being configured and dimensioned for mounting of a surgical instrument thereon; and

first and second removable handles receivable in said threaded members such that said removable handles may be brought together to close said jaws and rotated to rotate said threaded members thereby locking said clamp jaws.

~~32.~~ A surgical system for using a robot attached to a patients bone for assisting in surgical procedures by aligning a tool sleeve to locations created by a surgeon during pre-operative planning performed on a three dimensional image of the patient, said system comprising:

means for attaching an apparatus to the bone of a patient;

means for imaging a patient with said attached apparatus;

means for co-registering said images of the patient with said attached apparatus;

means for registering said images of the patient with said attached apparatus with images generated by a three dimensional scanner; and

means for operating by directing said apparatus to pre-operatively planned destinations, aligning a sleeve for receiving a surgical tool, and performing a surgical step.